

What are the x and y intercepts of $-3x + 5y = -9$

Answer Key

Name _____ Date _____ Block _____

Unit 5 Study Guide: Writing Linear Equations

Test 2/17/17

$i < 3m$

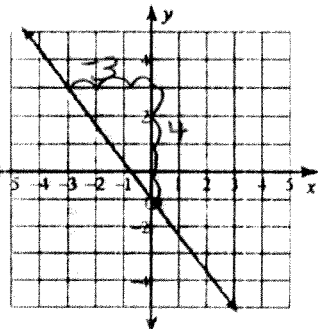
1.

What is the slope of the line $y = -2$?

HOY

2.

Which equation represents the line shown?



F. $y = \frac{1}{3}x - \frac{4}{3}$

G. $y = -x - \frac{4}{3}$

H. $y = x - \frac{4}{3}$

J. $y = -\frac{4}{3}x - 1$

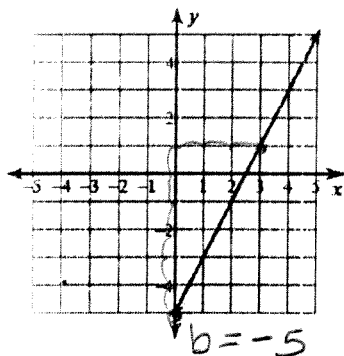
3.

What is the equation of a line with a slope of -1 and a y-intercept of 3?

$y = -x + 3$

4.

Which equation represents the line shown?



F. $y = 2x - 5$

G. $y = 3x - 5$

H. $y = -3x - 5$

J. $y = -5x - 3$

$m = \frac{5}{2} = 2$

5.

Sam rents a bike for \$12 plus 75¢ per hour. Write an equation to model the total cost of the bike rental.

$m = \# \text{ of hours}$

A. $C = 12m + 75$

B. $C = 0.75m + 12$

C. $C = 75m + 12$

D. $C = 0.12m + 75$

$m =$

6.

What is the slope of a line parallel to the line $8x - 2y = 14$?

$-8x -2y = -8x -14$

$-2y = -8x + 14$
 $y = 4x - 7$

7.

What is the equation of the line that passes through the point $(-2, -1)$ and has a slope of 1?

$m = 1$

A. $y = x - 1$

B. $y = -x - 1$

C. $y = -x + 1$

D. $y = x + 1$

$y + 1 = 1(x + 2)$
 $y + 1 = x + 2$
 $y = x + 1$

8.

What is the slope of a line perpendicular to the line $y = \frac{1}{5}x - 6$?

$\frac{1}{5} \rightarrow -\frac{5}{1}$

9.

Which statement is true of the given lines?

Line a: $y = -\frac{1}{4}x + 4$

Line b: $y = \frac{1}{4}x + 7$

Line c: $y = -4x - 1$

A. No Lines a and b are parallel.

B. No Lines a and c are perpendicular.

C. Lines b and c are perpendicular.

D. Lines a and c are similar.

10.

What is the standard form of the equation of a line that passes through $(4, -2)$, and $(1, -3)$?

$y = \frac{1}{3}x - \frac{10}{3}$
 $3y = x - 10$
 $x - 3y = 10$

A. $3x - y = -10$

B. $x - 3y = 10$

C. $3x - y = 4$

D. $x + 3y = 10$

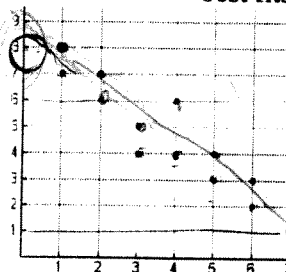
$m = \frac{-3 - (-2)}{1 - 4} = \frac{-1}{-3} = \frac{1}{3}$

$-3 = 1 \cdot \frac{1}{3} + b$

$-\frac{10}{3} = \frac{1}{3} + b$
 $-\frac{10}{3} - \frac{1}{3} = b$
 $-\frac{11}{3} = b$

11.

Choose the equation for the line that best fits the data in the graph.



F. $y = -x + 5$

G. $y = x + 8$

H. $y = 2x + 9$

J. $y = -x + 8$

Slope-intercept form
 $y = mx + b$

Standard form (no fraction)
 $AX + BY = C$

Write a linear equation in slope-intercept form questions 12-18:

12. The slope is 7; the y-intercept is 0.

$$y = 7x$$

13. The slope is 8; the y-intercept is -10.

$$y = 8x - 10$$

14. You and your friends plan to attend the county fair this weekend. The admission to the fair is \$5 and the cost per ride is 50¢. If your parents gave you \$20, write and solve a linear equation to find how many rides you can go on. $x = \# \text{ of rides}$

$$y = .50x + 5$$

$$20 = .50x + 5$$

$$15 = .50x$$

$$x = 30$$

Equation: $y = .50x + 5$	# of rides: 30
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15. $(5, -1), (5, 1)$

$$m = \frac{1 - (-1)}{5 - 5} = \frac{2}{0} \text{ undefined}$$

$$x = 5 \text{ VUX}$$

- 16.

$(3, -6), (7, -6)$ $m = \frac{-6 - (-6)}{7 - 3} = \frac{0}{4} = 0$ ~~to y~~

$$y = -6$$

17. $(-2, 0), (-1, 5)$ $m = \frac{5 - 0}{-1 - (-2)} = \frac{5}{1} = 5$

$$0 = 5(-2) + b$$

$$0 = -10 + b$$

$$b = 10$$

$$y = 5x + 10$$

18. $(3, -4), m = 2$

$$y + 4 = 2(x - 3)$$

$$y + 4 = 2x - 6$$

$$y = 2x - 10$$

Write an equation in standard form with integer coefficients for 19-20.

$$AX + BY = C$$

19. $y = \frac{1}{5}x + 5$

$$-5(\frac{1}{5}x + y = 5)$$

$$-x - 5y = -25$$

$$x - 5y = -25$$

20. $(-3, -4), m = \frac{4}{3}$

$$y + 4 = \frac{4}{3}(x + 3)$$

$$y + 4 = \frac{4}{3}x + 4$$

$$y = \frac{4}{3}x$$

The table below shows the density factor, d , of water at temperature of T ($^{\circ}\text{C}$).

T	0	2	4	6	8
d	28.93	28.79	28.6	28.36	28.08

21. Use your graphing calculator to construct a scatterplot for the table above. Then, determine whether T and d have correlation.

A.) Write the regression equation.

$$y = -.11x + 28.98$$

B.) Use the linear model to estimate the density factor of 7°C .

$$28.21$$

$$y = -.11(7) + 28.98 = 28.21$$

22. The equation of **LINE 1** is $y = 2x + 1$. All you know about **LINE 2** is that it passes through the point $(-4, 1)$. Write the linear equation of **LINE 2** in slope-intercept form when it is parallel to **LINE 1**.

$m = 2$ $(-4, 1)$ $y - 1 = 2(x + 4)$

$$y - 1 = 2x + 8$$

$$y = 2x + 9$$

27. Look at the data.

$\{(-3, -2), (-2, -1), (2, 1), (4, 2), (6, 3), (9, 5)\}$

Which equation most closely represents the line of best fit for this data?

A $y = x + 1$

B $y = .56x - .15$

C $y = .56x + .15$

D $y = .5x$

x	y
-3	-2
-2	-1
2	1
4	2
6	3
9	5

$$y = .555x - .15$$

You know how to do this! Believe in yourself!